



## NOAA RESTORE Act Science Program - Science Plan

### Overview

The science plan for the NOAA RESTORE Act Science Program lays out the path forward for the Program. The plan explains out how the legislative requirements led to the Program's mission and goal. The plan also establishes ten long-term research priorities which will guide how the Program will invest its funds and explains the process by which these areas of investment were determined. Additionally, the plan provides information on how the Program will be administered and the partners with which the Program will leverage future opportunities.

### Steps Used to Identify Long-Term Research Priorities

Using the legislative requirements for the NOAA RESTORE Act Science Program as the boundaries for determining long-term research priorities, the Program's science planning working group reviewed numerous science and research needs assessments prepared for the Gulf of Mexico over the past several years. The working group consolidated common priorities from among all the assessments. The Program also hosted engagement events and held extensive meetings with stakeholders, including representatives from the Gulf States Marine Fisheries Commission, Gulf of Mexico Fishery Management Council, universities, federal and state agencies, and non-governmental organizations, to gather additional input which was incorporated into the priority identification process. The research priorities were then further refined by their connection to an identified management or restoration need, linkage to the Program's mission and goal, and whether or not the priority duplicated a priority from another Gulf of Mexico science program. This process resulted in a set of long-term research priorities which are linked to identified management and restoration needs and with anticipated research outcomes consistent the scope of the Program.

### Public Comment on the Science Plan

In response to a public comment period on a draft version of the science plan at the end of 2014, NOAA received 20 sets of comments from organizations and

**The vision for the NOAA RESTORE Act Science Program is for the long-term sustainability of the Gulf of Mexico ecosystem and the communities that depend on it.**

**Mission:** To carry out research, observation, and monitoring to support, to the maximum extent practicable, the long-term sustainability of the ecosystem, fish stocks, fish habitat, and the recreational, commercial, and charter-fishing industry in the Gulf of Mexico.

**Goal:** To support the science and coordination necessary for better understanding and management of the Gulf of Mexico ecosystem, leading to:

- healthy, diverse, sustainable, and resilient estuarine, coastal and marine habitats and living resources (including wildlife and fisheries); and
- resilient and adaptive coastal communities.

**Outcomes:** The NOAA RESTORE Act Science Program seeks the following outcomes.

- The Gulf of Mexico Ecosystem is understood in an integrative, holistic manner.
- Management of, and restoration activities within, the Gulf of Mexico ecosystem are guided by this ecosystem understanding.

private citizens totaling 241 recommendation all together. From the draft version of the plan to the final version of the plan, the key changes were a clearer description of NOAA's role in the Program, additional information on the factors the Program will consider in translating the long-term research priorities into future funding opportunities, and additional information on the geographic scope of the Program. Addressing the recommendations provided during the public comment period has resulted in a stronger science plan.



## Next Steps for the Science Plan

The long-term research priorities contained in the science plan will serve as the basis for future funding opportunities from the Program. The Program will select the priorities to be addressed in each funding opportunity based on several factors including stakeholder input on critical regional science and management needs, the topics being addressed by other science initiatives, new research results, and, the extent to which addressing a priority will advance the mission of the Program.

NOAA anticipates that the science plan and its research priorities will be evaluated and updated every five years. The Program may choose to update the plan or add supplementary material more frequently following significant events in the Gulf of Mexico region, major

advances in our understanding of how the Gulf of Mexico ecosystem functions, or additional payments into the Gulf Coast Restoration Trust Fund, which may result in substantial additional funding for the Program.



## Long-Term Research Priorities

- Comprehensive understanding of ecosystem services, resilience, and vulnerabilities of coupled social and ecological systems
- Construct management-ready and accessible ecosystem models
- Improve monitoring, modeling, and forecasting of climate change and weather effects on the sustainability and resiliency of the ecosystem
- Comprehensive understanding of freshwater, sediment, and nutrient flows and impacts on coastal ecology and habitats
- Comprehensive understanding of living coastal and marine resources, food web dynamics, habitat utilization, protected areas, and carbon flow
- Develop long-term trend and variability information on the status and health of the ecosystem, including humans
- Develop, identify, and validate system-wide indicators of environmental and socioeconomic conditions
- Develop decision-support tools to assist resource managers with management decisions planned to sustain habitats, living coastal and marine resources, and wildlife
- Network and integrate existing and planned data and information from monitoring programs
- Develop and implement advanced technologies to improve monitoring

